

Mr. Baillie

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1937
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REPORT
OF
THE ROYAL ONTARIO MUSEUM OF ZOOLOGY

May 1, 1937 to Sept. 30, 1937

Accessions during this period were as follows:

	Donated	Collected	Purchased	Exchanged	Total
Mammals	161	420	195	48	824
Birds	243	1162	28	5	1438
Birds' nests	14	37			51
Birds' eggs (sets)	155	31			186
Reptiles	33	33			66
Amphibians	81	91			172
Fish	260	645	69	5	979
Insects	476				476
Spiders	71	4000			4071
Molluscs	323*	80*	1400*		1803*
Other invertebrates	106*	25*			131*

(*, Lots; many of which contained large numbers of individual specimens.)

Accessions to the Library included 34 books and 653 papers.

Some of the outstanding donations were as follows:

AUSTRALIAN MUSEUM, Sydney, Australia (through Miss H. Bain)
Collection of 40 species of Australian marine shells.

BOGGS, O. D., International Petroleum Co., Negritos, Peru.
Collection of 107 South American birds, all with complete data.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

DATE	NAME	SECTION	LABORATORY	INSTRUCTOR
1900	1	1	1	1
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DATE

CHANT, Professor C. A., Richmond Hill, Ontario. Collection of 267 shells, representing 110 species collected in Australia, and 1 shell rescued from the University fire of 1890.

COVENTRY, Professor A. F., Department of Biology, University of Toronto. 50 mammals, 15 fish, 3 birds' nests and 2 snakes.

KERR, Charles J. 428 Mary St., Hamilton. 18 journals of his father and brother, John W. and Fred Kerr, Fisheries Inspectors of Hamilton, 1864-1898; 39 early reports of the Fisheries Department at Ottawa, 14 other government reports and 5 books.

MARSH, Rev. D. B., Eskimo Point, N. W. T. Skin, skull and antlers of a barren ground caribou, 9 fish, 10 birds, 115 insects.

MARCUS, J. A., Thamesville, Ontario. 90 marine shells from California.

MORROW, G. A., Port Credit, Ontario (through J. R. Barr, Farm Manager). 26 foreign birds from their aviary. Some of these are rare in collections, and difficult to obtain except through such sources.

NATIONAL PARKS BUREAU, Ottawa, Ontario. Grizzly bear and trumpeter swan.

TONER, G. C., Gananoque, Ontario. 18 bats, 5 living pilot snakes, 36 fish, 16 amphibians and reptiles.

YOUNG, B. E. Waterloo, Ontario. 4 birds and 136 sets of birds' eggs, collected by his father, the late Rev. C. J. Young.

NEW EXHIBITS

Biological Principles

A new series of exhibits, illustrating various biological principles, is in process of construction. The first two bear the titles "Role of the Birds of Prey" and "Nature's House that Jack Built." In the latter is shown "the hawk that eats the snake that eats the frog that eats the 'hopper' that eats the grass that grows in the earth about us." This illustrates a number of principles. One of these is the "Pyramid of numbers": there must be more snakes than hawks, more frogs than snakes and more grasshoppers than frogs. A glance at the exhibit shows that the animals are not only in increasing order of numbers, but in decreasing order or size from above downwards. It also reminds us that "all flesh is grass" -- all animal life is dependent on plant life. One animal may eat another, and this one in turn may be dependent on still other animals, but at the end of every food chain we come to plant life.

The Breeds of Dogs

A series of mounts of outstanding specimens of various breeds of dogs has been inaugurated. It is not planned to have representatives of all breeds: by selecting widely different types, the effect of artificial selection in producing markedly different animals will be strikingly shown.

The first three breeds to be mounted and their donors are: Saluki, donated by Mrs. A. Mulock. This is one of the oldest breeds of dogs, images of the Saluki being found in early Egyptian remains. It is now extremely rare and the Museum was fortunate to secure this fine specimen. Bulldog, donated by Mr. R. P. Sparkes. This was an international champion, named "Bunjie", and succumbed to the violent heat wave of 1936. It was valued at \$10,000. Beagle hound, donated by Mr. Emerson Robertson. This was a well-bred specimen and a Canadian prize-winner.

Living animals

The living animals exhibited in the aquarium have proved so attractive that a number of vivaria for the exhibition of air-breathing animals have recently been installed in the galleries. The animals shown are changed from time to time. Living exhibits recently shown included 9 species of tropical fish and 5 species of native fish, black garter snakes, hog-nose snakes, newts, bull-frogs, blue-tailed skink, snapping turtles and box tortoises.

Zoology of a Century Ago

A glimpse of the work of biologists of nearly a century ago is afforded by an exhibit of publications of that period, arranged as a temporary exhibit. Many of these papers bear the autographs of the authors -- Owen, Darwin, Bonaparte, Richardson, etc. This collection formed part of the library of Adam White, F.L.S., who was a member of the Zoological staff of the British Museum from 1835 to 1863. There is also a collection of pictures of the leaders of scientific thought of the same time. A major part of this material was donated and the remainder loaned by Mrs. David White of Toronto.

Work of Art Students

Gallery exhibits serve a number of purposes, little appreciated by the average museum visitor. For instance, many art classes visit the galleries to sketch the animals shown there. An exhibition of the work of one of these classes, from the Central Technical school, was made the subject of a special temporary exhibit during the summer.

Loan Exhibits

The Museum of Zoology's contribution to the Royal Ontario Museum's loan exhibits prepared for circulation among a number of Ontario cities was arranged in the Kitchener Public Library in September. One section of the exhibit consisted of material illustrating the story of the passenger pigeon in Ontario, including a large coloured photograph of the Museum's passenger pigeon habitat group, a pigeon net actually used for trapping pigeons, a muzzle loader used in Toronto in the 1860's to shoot pigeons and a pair of mounted passenger pigeons. A second case included a collection of unusual animals from Australia.

An exhibit of some brilliantly coloured birds and little known or unusual mammals was shown in connection with the Educational Exhibit at the Canadian National Exhibition.

SUMMER FIELD WORK

The Museum has had a most successful summer of field work. As remarked before in these reports, there is more information available in our libraries on some phases of the natural history of China and Africa than on that of Ontario. The Museum's field expeditions are gradually filling up the blanks in our knowledge of the animal life of our province.

An interesting phase of this work is the light it is throwing on the return of life to our province following the retreat of the last ice sheet. It is evident, for instance, that one avenue by which animal life returned to Ontario was across the St. Lawrence into eastern Ontario. Our work has revealed a number of forms of life that are found in Ontario only in the extreme eastern part of the province. Others are found there and in the southwest but not in the intervening area. For instance, the pilot black snake (Elaphe obsoleta) is known to occur in Leeds County in eastern Ontario and in south-western Ontario as far east as St. Catharines, but not in the area between these points. Other species found in eastern Ontario and in the south-western part of the province but not between are the blue-tailed skink, map turtle, musk turtle and Blanding's turtle. Species that have penetrated into eastern Ontario but have not spread westward include the fallfish (Leucosomus corporalis) and cutlips (Exoglossum maxill-
ingua) and a number of species of spiders discovered by Mr. Kurata of the Museum staff during the past summer. Undoubtedly additional studies in this area will add to this list.

Great interest was attracted recently by the American Museum of Natural History's expedition to Shiva Temple, an erosion-made 'island' in the Grand Canyon of Colorado. The purpose of the expedition was "to study the animal species which, isolated from the mainland for several thousand years, have been untouched by the evolutionary changes going on in the surrounding country."

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<https://archive.org/details/annualreportofro37roya>

Opportunities of studying similar evolutionary changes are afforded by the animals of eastern Ontario as compared with those of south-western Ontario. Species which occur in these two areas and not between have probably been separated from one another as long as the animals of Shiva's temple have been isolated from the same species on the mainland. In several respects, Ontario affords an excellent field for the study of problems of zoogeography.

Mammals

Three field work projects were carried out during the summer. Messrs. Cross, Prince and Downing investigated conditions in early spring along the St. Lawrence valley from Kingston to the Ottawa river. An abnormal scarcity of small mammals was found in the area. We have little information as to the effect of a winter such as that of 1936-37 on animal life, and little knowledge of the activities of small mammals in early spring. It is of interest to note that the breeding seemed delayed, specimens taken were infested with ectoparasites, and even in the areas where mammals were very scarce at the time of visiting, evidence was available to show that they had been present in some abundance the previous fall.

Messrs. Prince and Downing spent eight weeks in field work along the transcontinental line of the Canadian Pacific Railway between the French River and Chapleau. Collections were made at Chapleau, Biscotasing and Bigwood, completing the survey begun last year of the area between the French River and Rossport on the north shore of Lake Superior.

Mr. Cross carried out some preliminary investigations of conditions in Algonquin Park, in preparation for the study of animal populations under park conditions.

In addition to this work by members of the staff, collections were made at various points by amateur collectors.

Birds

Prior to 1923, our knowledge of Ontario's bird life was based on casual reports of individual workers, whose field of activity was largely confined to the more populous centres in the south. In 1923, the Royal Ontario Museum of Zoology undertook to carry out a survey of the Province. Except for the necessary adjustment of each summer's work to available funds, this survey has been proceeded with as a systematic programme, although an interruption was enforced during the difficult years of 1931 to 1935.

The objective of such a survey is, first, to determine in some detail the kinds and distribution of birds occupying the provincial area during the reproductive season. Secondly, work in the field provides specimen material for comparative studies which will contribute towards an understanding of racial variation of

birds in this part of North America. Other data bearing on the ecology and behaviour of birds and on the physiography and other environmental factors of each district visited, although obtained more or less incidentally, are an important product of these surveys.

The work conducted in the field during the summer of 1937 was directed towards tying together the information obtained in surveys during previous years at key stations -- Rainy River, Nipigon, the north-east shore of Lake Superior and Sault Ste. Marie. Two members of the Division of Birds' staff investigated the region along the Canadian Pacific Railway from the Manitoba boundary to Fort William, establishing four collecting stations along this line: at Ingolf, Wabigoon, Savanne and Murillo. A second party, consisting of two members of the Division's staff, worked along the same railroad through Sudbury District, establishing stations at Chapleau, Biscotasing and Bigwood. Eleven hundred and fifty specimens were collected, all but a very few preserved in the field, ready for incorporation into the Museum's study collection. At least one new species was added to the Provincial list by this summer's work. One hundred and forty-three species of birds were recorded by the combined parties and a preliminary estimate of relative abundance arrived at.

For the most part, each one of these records is a new and valuable contribution to provincial ornithology. Many represent a notable extension of the known range, from a continental viewpoint. The collections made are rich in material for age and plumage studies and contain adequate series for the study of several taxonomic and distributional problems in this latitude.

Amphibians and Reptiles

No special programme of field work was undertaken by this Division during the past summer. Two short field excursions were made, one to Turkey Point and Long Point, Lake Erie, and one to the Meaford district. These field trips were undertaken to secure specimens and information on some species about which comparatively little has been known, so far as Ontario is concerned, viz., the four-toed salamander and the ring-necked snake.

Fishes

On account of the importance of eastern Ontario in the study of animal distribution, special attention was devoted to that area by the Division of Fishes during the past summer. Miss I. Limbert, assisted by Mr. G. C. Toner of Gananoque, made a collecting trip from the St. Lawrence to the Ottawa rivers. At Ottawa, they were met by J. R. Dymond, and ten days were spent in that area. One purpose of this expedition was to secure information in connection with the preparation of an account of the fishes of the Ottawa region, which is to be published for the meeting of the American Association for the Advancement of Science in Ottawa next summer. The expedition was quite successful, all the species expected were found and also some which were a surprise.

Through the cooperation of the Hudson's Bay Company and a number of interested individuals, the Museum is gradually building up a collection of the Fishes of the North West Territories. Although this was one of the first parts of the country whose fish life was investigated, there has been comparatively little scientific information added to our knowledge of this area since Richardson published his account of the fishes in the Fauna Boreali-Americana in 1836.

Molluscs

Although the Museum has long possessed a considerable collection of molluscs, it is only within the last two or three years that it has been possible to organize the care and study of this material on the basis of a regular division. Although the collection contains a good deal of material from outside Ontario, special attention is being given to a study of the molluscs of Ontario.

During the past summer, attention was directed to the land shells. Large collections of shells, concentrated by spring floods, were secured by a few days work at eleven different localities. One such collection has been partially sorted and classified. It yielded over 4,000 specimens, representing more than 40 species. This provides at small expense large series of specimens, suitable for distributional and taxonomic studies, and in addition a surplus for exchange with other Museums. Such suites of shells would require perhaps five or six months for collection by ordinary methods.

In addition to collecting designed to build up the collections of Ontario molluscs, a special study of the fauna of small islands was undertaken. Islands are of interest to the ecologist, since they may be considered as colonies somewhat isolated in space. Such an investigation is expected to contribute materially to the general study of zoological distribution in which the Museum is especially interested.

Spiders

The Museum has an extensive collection of the spiders of Ontario. Much of this collection is a by-product from expeditions sent out for other purposes, but large numbers have been collected by interested friends of the Museum. During the past summer, additions were made from areas hitherto unrepresented: Timagami, New Liskeard, Pembroke and Eastern Ontario.

A MEADOW MOUSE PLAGUE

Early in the autumn, reports of a plague of meadow mice reached the Museum from Kapuskasing and Smoky Falls. According to these reports, meadow mice were excessively abundant over an area at least eighty miles in length, centering around Kapuskasing. The Museum immediately sent out a questionnaire to correspondents in

north-western Ontario in an effort to determine how large an area was affected, and to get as much additional information on the outbreak as possible. From the replies received, it would seem that this outbreak was rather circumscribed. Reports from the Manitoba-Ontario boundary and from the Ontario shore of Hudson Bay indicate abundance in these areas also.

It will be remembered that, during the fall of 1935 and the winter of 1935-36, these mice were very numerous in certain sections of southern Ontario. Reports from New York and Illinois indicate that they were also abundant in 1935 in those states.

UNUSUAL ABUNDANCE OF SPHINX OR "HUMMING BIRD MOTHS"

The Museum has been deluged with requests to identify sphinx moths which have been unusually abundant in many parts of Ontario during the past summer. These large insects visit flowers for the purpose of feeding on the nectar, much as humming birds do.

That the abundance of sphinx moths is of more than local interest and importance is indicated by the fact that, at the recent meeting of the British Association for the Advancement of Science, a paper on cycles of abundance and scarcity of hawk moths was presented. Records extending over 130 years in Britain and 60 years in America were said to demonstrate the existence of such cycles.

NOTES

Mr. L. L. Snyder, Curator of Birds, has been appointed Canadian Editor of the Educational Leaflets of the Association of Audubon Societies.

Mr. J. G. Oughton represented the Museum at the annual meeting of the American Malacological Union, which met at the Museum of Zoology, University of Michigan, in August.

Talks on the work of the Museum were given by Messrs. Snyder and Baillie in Dryden and Chapleau respectively, during the summer, while they were in the vicinity of those towns on field work.

Professor J. R. Dymond gave a radio talk on the Freshwater Fishes of Eastern Canada, over the eastern network of the Canadian Broadcasting Corporation, on September 3rd.

We have recently received from a correspondent in Texas a request for the identification of an insect new to North America. Identification was made with the aid of Seitz' Butterflies of North America, a book recently acquired by the Museum, and by comparison with specimens in the collection.

The Museum was asked by Dr. Campbell, in charge of the Children's Zoo at the Canadian National Exhibition, to prepare labels for the various animals shown. Searching out and condensing the information required about one-quarter of Mr. McDougall's time in August. Anyone who has tried to write a museum label knows that the work involved is in inverse proportion to the number of words to be used.

MUSEUM VISITORS

Among recent visitors to the Museum were:

Dr. V. M. Klemola, Chief Game Inspector of Finland.
 Professor M. Y. Williams, University of British Columbia.
 Dr. I. McT. Cowan, Assistant Director, Provincial Museum of B. C.
 Dr. H. F. Lewis, National Parks Bureau, Ottawa
 Mr. T. D. Patterson, London, Ontario.
 Mr. L. B. Potter, Eastend, Saskatchewan
 Mr. P. A. Taverner, Ornithologist, National Museum of Canada
 Mr. H. H. Krug, Chesley, Ontario.
 Dr. E. L. Brereton, Barrie, Ontario.
 Mr. R. V. Whelan, Smoky Falls, Ontario.
 Mr. A. A. Wood, Strathroy, Ontario.

Mr. R. C. Brooman, Waterloo, Ontario
 Mr. J. F. S. Fletcher, Pennsylvania.
 Dr. W. E. Clyde Todd, Ornithologist, Carnegie Museum, Pittsburgh
 Mr. Sam Waller, Manitoba.
 Dr. L. J. Milne, Virginia.
 Dr. C. H. D. Clarke, Ottawa
 Mr. R. W. Sheppard, Niagara Falls, Ontario
 Mr. R. A. McKenzie, St. Andrews, New Brunswick
 Miss R. Renton, King's College, London, England.
 Dr. A. E. Warren, McMaster University, Hamilton.
 Mr. P. Henderson, who accompanied Dr. Lewis to the Gulf of St. Lawrence.

CLERICAL WORK

Letters	993
Postcards	17
Publications	49
Parcels	35
Manuscripts	5
Circulars and questionnaires	558

